



STIC Search Report

EIC 1700

STIC Database Tracking Number: 93289

TO: Tanya Zalukaeva
Location: CP3 8E16
May 6, 2003

Case Serial Number: 10/037552

From: Kathleen Fuller
Location: EIC 1700
CP3/4 3D62
Phone: 308-4290

Kathleen.Fuller@uspto.gov

Search Notes

SEARCH REQUEST FORM

Access DB# 93289

Scientific and Technical Information Center

Requester's Full Name: Zachary, Tanya Examiner #: 76608 Date: 5/5/03
 Art Unit: 1713 Phone Number 301-88191 Serial Number: 90/037,552
 Mail Box and Bldg/Room Location: SE16 CP3 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See attached bibliographic
 Inventors (please provide full names): data sheet

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Compound of claim 1
 names: butyl
propyl
poly [acetoxystyrene-(2-hydroxyethyl-acrylate)]
 Examples with names in claims 2-7

Thank you very much
 Tanya

STAFF USE ONLY

Searcher: <u>K. F. [unclear]</u>	Type of Search	Vendors and cost where applicable
Searcher Phone #: _____	NA Sequence (#) _____	STN <u>✓</u>
Searcher Location: _____	AA Sequence (#) _____	Dialog _____
Date Searcher Picked Up: _____	Structure (#) <u>2</u>	Questel/Orbit _____
Date Completed: <u>5/6/03</u>	Bibliographic _____	Dr.Link _____
Searcher Prep & Review Time: <u>20</u>	Litigation _____	Lexis/Nexis _____
Clerical Prep Time: _____	Fulltext _____	Sequence Systems _____
Online Time: <u>22</u>	Patent Family _____	WWW/Internet _____
	Other _____	Other (specify) _____

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:*

Example:

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62 .

=> FILE REG

FILE 'REGISTRY' ENTERED AT 15:41:56 ON 06 MAY 2003
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 5 MAY 2003 HIGHEST RN 510776-00-8
DICTIONARY FILE UPDATES: 5 MAY 2003 HIGHEST RN 510776-00-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> FILE HCAPLUS

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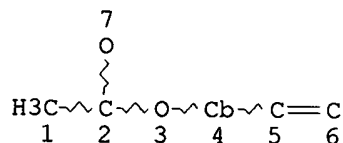
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FILE COVERS 1907 - 6 May 2003 VOL 138 ISS 19
FILE LAST UPDATED: 5 May 2003 (20030505/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> D QUE

L3 STR {



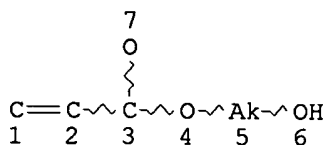
NODE ATTRIBUTES:

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE
L4 STR 2

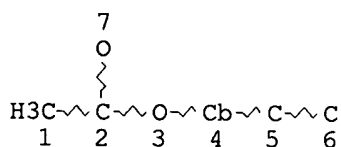


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

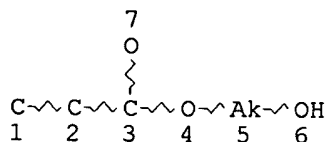
L6 SCR 2043
L8 13 SEA FILE=REGISTRY SSS FUL L3 AND L4 AND L6
L9 6 SEA FILE=REGISTRY ABB=ON L8 AND 2/NC
L10 6 SEA FILE=REGISTRY ABB=ON L*** OR L9
L11 6 SEA FILE=REGISTRY ABB=ON L9 OR L10
L12 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE
L13 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

*13 polymers from
structure 1 and 2*

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L15 15 SEA FILE=REGISTRY SSS FUL L12 AND L13 AND L6
L16 0 SEA FILE=REGISTRY ABB=ON L15 AND 1/NC
L17 6 SEA FILE=REGISTRY ABB=ON L15 AND 2/NC
L18 6 SEA FILE=REGISTRY ABB=ON L11 OR L16 OR L17
L19 3 SEA FILE=HCAPLUS ABB=ON L18

=> D L19 ALL 1-3 HITSTR

L19 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:221940 HCAPLUS
DN 138:262717
TI Improvements in relation to imagable articles and compositions and their use
IN Kitson, Anthony Paul; Cook, Diane; Ray, Kevin Barry; Wright, Colin Adrian
PA Kodak Polychrome Graphics LLC, USA
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G03C001-73
ICS G03F007-035
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
FAN.CNT 1

Handwritten notes: $\frac{H}{f} \frac{1}{c} - \frac{c}{f}$ and CH3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003023515	A1	20030320	WO 2002-US26261	20020816
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003077538	A1	20030424	US 2001-948182	20010907
PRAI US 2001-948182	A	20010907		
AB A thermally imagable article comprises a substrate on which is coated a pos. working heat-sensitive compn. comprising a hydroxyl group-contg. polymer and a heat-labile moiety which decreases the developer soly. of the compn. as compared to the developer soly. of the compn. without the heat-labile moiety, wherein the heat-sensitive compn. does not comprise an acid generating moiety. The invention also provides novel pos. working compn. comprising heat-labile moieties, and imagable articles comprising said compns.				
ST lithog printing thermal imaging articles compn				
IT Imaging (thermal; thermally imagable articles for lithog. printing contg.				

heat-sensitive compn.)

IT Lithography

(thermally imagable articles for lithog. printing contg. heat-sensitive compn.)

IT 9039-25-2DP, LB 6564, partially react with dibutyldicarbonate

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(LB 6564; thermally imagable articles for lithog. printing contg.)

IT 4525-32-0DP, Dibutyldicarbonate, partially reaction product with poly(vinyl phenol) 24979-78-0DP, Poly(4-acetoxystyrene), hydrolyzed 24979-78-0DP, Poly(4-acetoxystyrene), hydrolyzed and partially react with dibutyldicarbonate 87261-04-9P 110123-09-6DP, 4-Hydroxystyrene-2-hydroxyethyl methacrylate copolymer, hydrolyzed and partially react with dibutyldicarbonate **149935-04-6DP**, 4-Acetoxystyrene-2-hydroxyethyl methacrylate copolymer, hydrolyzed 214334-14-2P 502498-40-0DP, PD 126 (novolak), partially reacted with di-Bu dicarbonate RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(thermally imagable articles for lithog. printing contg.)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Foss; US 4247624 A 1981 HCAPLUS
- (2) Gries; US 20020009671 A1 2002
- (3) Kitson; US 6423456 B1 2002 HCAPLUS
- (4) Levanon; US 6255033 B1 2001 HCAPLUS
- (5) Nakamura; US 6410203 B1 2002 HCAPLUS
- (6) Takata; US 6143471 A 2000 HCAPLUS

IT **149935-04-6DP**, 4-Acetoxystyrene-2-hydroxyethyl methacrylate copolymer, hydrolyzed

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

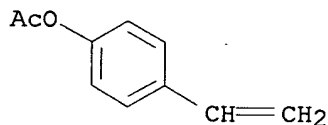
(thermally imagable articles for lithog. printing contg.)

RN 149935-04-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

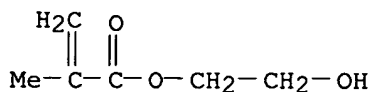
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

CRN 868-77-9
CMF C6 H10 O3



L19 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:696692 HCAPLUS
 DN 137:217399
 TI Organic anti-reflective coating polymers for semiconductor device fabrication
 IN Jung, Min-Ho; Jung, Jae-Chang; Lee, Geun-Su; Shin, Ki-Soo
 PA S. Korea
 SO U.S. Pat. Appl. Publ., 7 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC C08F118-02
 NCL 526219600
 CC 35-4 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 76

applicants

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002128410	A1	20020912	US 2002-37552	20020104
	JP 2002265536	A2	20020918	JP 2001-283830	20010918
	GB 2374078	A1	20021009	GB 2001-26854	20011108
	CN 1373143	A	20021009	CN 2001-143928	20011226
	FR 2821846	A1	20020913	FR 2002-1633	20020211
	DE 10207182	A1	20030123	DE 2002-10207182	20020221
PRAI	KR 2001-11724	A	20010307		

AB Acetoxystyrene-hydroxyalkyl (meth)acrylate copolymers are prepd. and are useful in anti-reflective coatings which prevent back reflection of lower film layers and eliminates standing wave that is occurred by a thickness change of photoresist and light in fabrication of ultrafine patterns that use photoresist for lithog. by using 193 nm ArF. More particularly, the org. anti-reflective polymer of the present invention is useful for fabricating ultrafine patterns of 64M, 256M, 1G, and 4G DRAM semiconductor devices.

ST acetoxystyrene hydroxyalkyl acrylate copolymer antireflective coating semiconductor

IT Antireflective films
 Polymerization
 Semiconductor devices
 (org. anti-reflective coating polymers for semiconductor device fabrication)

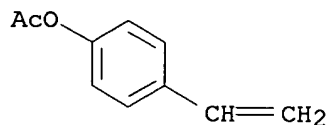
IT 149935-04-6P 457081-07-1P 457081-08-2P
 457081-09-3P 457081-10-6P 457081-11-7P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (org. anti-reflective coating polymers for semiconductor device fabrication)

IT 149935-04-6P 457081-07-1P 457081-08-2P
 457081-09-3P 457081-10-6P 457081-11-7P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (org. anti-reflective coating polymers for semiconductor device fabrication)

fabrication)
 RN 149935-04-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

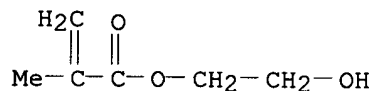
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CRN 2628-16-2
 CMF C10 H10 O2



CM 2

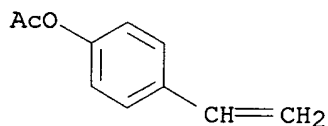
CRN 868-77-9
 CMF C6 H10 O3



RN 457081-07-1 HCAPLUS
 CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 4-ethenylphenyl
 acetate (9CI) (CA INDEX NAME)

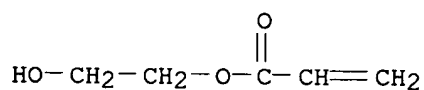
CM 1

CRN 2628-16-2
 CMF C10 H10 O2



CM 2

CRN 818-61-1
 CMF C5 H8 O3



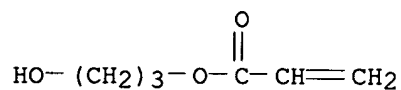
RN 457081-08-2 HCAPLUS

CN 2-Propenoic acid, 3-hydroxypropyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 2761-08-2

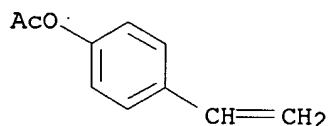
CMF C6 H10 O3



CM 2

CRN 2628-16-2

CMF C10 H10 O2



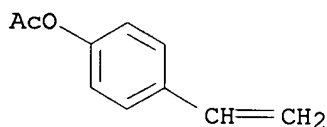
RN 457081-09-3 HCAPLUS

CN 2-Propenoic acid, 4-hydroxybutyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 2628-16-2

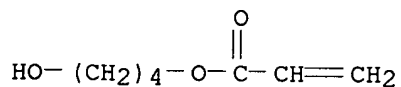
CMF C10 H10 O2



CM 2

CRN 2478-10-6

CMF C7 H12 O3



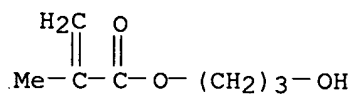
RN 457081-10-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-hydroxypropyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 2761-09-3

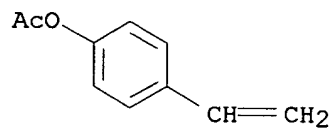
CMF C7 H12 O3



CM 2

CRN 2628-16-2

CMF C10 H10 O2



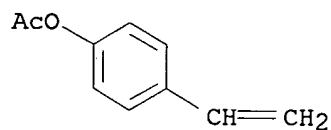
RN 457081-11-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-hydroxybutyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 2628-16-2

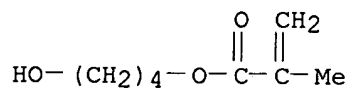
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CM 2

CRN 997-46-6

CMF C8 H14 O3



L19 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:541286 HCAPLUS

DN 119:141286

TI Seawater-erodible antifouling paints containing hydroxy or hydrolyzable

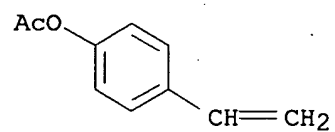
group-containing acrylic polymers
 IN Warnez, Michel Yves; Christensen, Thomas; Garmin, Henriette; Codolar, Santiago Arias
 PA Hempel's, J. C., Skibsfarve-Fabrik A/S, Den.
 SO PCT Int. Appl., 64 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C09D005-16
 CC 42-7 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9302146	A1	19930204	WO 1992-DK227	19920716
	W: AU, BR, CA, FI, JP, KR, NO, PL, RU, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	AU 9223862	A1	19930223	AU 1992-23862	19920716
	EP 596023	A1	19940511	EP 1992-917045	19920716
	EP 596023	B1	19981014		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
	AT 172225	E	19981015	AT 1992-917045	19920716
PRAI	DK 1991-1374		19910719		
	WO 1992-DK227		19920716		
AB	The title paints contain antifouling agents, water-insol. acrylic polymers having wt.-av. mol. wt. .gtoreq.2000, and pigments. A paint contained poly(2-hydroxyethyl methacrylate), Cu ₂ O, and ZnO.				
ST	antifouling paint hydroxyethyl methacrylate polymer; cuprous oxide antifouling paint; zinc oxide antifouling paint				
IT	Fouling control agents				
	(cuprous oxide, acrylic polymer slow-release coatings contg.)				
IT	Coating materials				
	(antifouling, acrylic polymers contg. cuprous oxide for)				
IT	Acrylic polymers, uses				
	RL: USES (Uses)				
	(hydroxy-contg., paints contg. antifouling agents and)				
IT	1317-39-1, Copper oxide (Cu ₂ O), miscellaneous				
	RL: MSC (Miscellaneous)				
	(antifouling agents, paints contg. acrylic polymers and)				
IT	1314-13-2, Zinc oxide, uses				
	RL: USES (Uses)				
	(paints contg. acrylic polymers and, antifouling)				
IT	9016-69-7 25249-16-5, 2-Hydroxyethyl methacrylate homopolymer				
	25702-92-5, Butyl methacrylate-2-hydroxyethyl methacrylate copolymer				
	26355-01-1, 2-Hydroxyethyl methacrylatemethyl methacrylate copolymer				
	29300-10-5, Acrylamidebutyl methacrylate copolymer 70788-64-6				
	78733-25-2 149935-02-4 149935-03-5 149935-04-6				
	RL: USES (Uses)				
	(paints contg. antifouling agents and)				
IT	149935-04-6				
	RL: USES (Uses)				
	(paints contg. antifouling agents and)				
RN	149935-04-6 HCAPLUS				
CN	2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)				

CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

CRN 868-77-9
CMF C6 H10 O3

